BETULA UBER (ASHE) FERNALD REDISCOVERED IN VIRGINIA

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REED HERBARIUM, BALTIMORE, MARYLAND FELLOW, SMITHBONIAN INBTITUTION

AFTER BEVERAL VIBITS TO THE SUGAR GROVE - RYE VALLEY AREA OF SMYTH CDUNTY, VIRGINIA, THE AUTHOR HAS BEEN ABLE TO RELOCATE THE TYPE LOCALITY OF BETULA UBER (ASHE) FERNALD. ON A TRIP FROM AUGUST 14 THROUGH AUGUST 16, 1975 IN AN AREA WHICH TOOK ME FROM TROUT DALE TO SUGAR GROVE, DVER IRON MOUNTAIN IN GRAYSON COUNTY AND THEN ODWN DICKEY CREEK TO SUGAR GROVE TO SUGAR GROVE, TEAS AND THE OLO RYE VALLEY STATION AREA (NDW SUGAR GROVE), THE AUTHOR CAME TO THE CONCLUSION THAT THE ORIGINAL LABEL WAS EITHER INCORRECT OR TOO GENERAL. IN SOME RESPECTS IT HAS PROVEN BOTH.

Betula uber (Abhe) Fernalo, according to data on the label, selected by Mazzeo (1974) ab the lectotype, is given the following type locality: "On bank of Btream, small tree, at foot of mountain, 20-25 ft. tall, Dickey Creek, end of Fldrence Maybrick tract, 4 mi. sduth of Rye Valley Station. Smyth Co., Virginia. January 14 (corrected to June by Fernald in 1945), 1914". These specimens were named <a href="mailto:betalta:

When Fernald (1945) raised the variety to a species, he cited another specimen, labelled "Along Crebby Creek. H.B. Avres", without date, but it was either collected at the same time as or earlier than the specimens cited by Ashe. Whether Avres collected all the specimens cited by Ashe converted them together, is not clear. The description of Setula Lenta vars user appears abuptly at the end of an article caling with a variation of Setula Papyrifera from North Carolina, which is discussed at Length in a manner typical of Ashe. Then, without any introduction or discussion, either sefore or after, at the end of this article, appears the description and locality data given above for B. Lenta var. User" Means fruitful, referring to the many spent fruiting cones on the twigs of the type specimens. Since all specimens are in full green-leaf and the fruiting cones are dead-ripe, dropping seeds, the date of collection is surely June, not January.

HDRACE BEEMER AYRES (AMER. MEN OF SCIENCE, 1: 12. 1906; 2: 17. 1910; 3: 24. 1921), BDRN IN ALLAMUCHY, NEW JERSEY, SEPT. 20, 1856, AND RECEIVING HIS B.S. DEGREEE AT LAFAYETTE COLLEGE IN 1878, WAS A GEOLOGIST AND TIMBER INSPECTOR, MAINLY IN THE ENGINEERIND DEPARTMENT OF THE NORTHERN PACIFIC RR. CO.; HE LIVED IN KIMBERLY, MINNESDTA MDST OF HIS LIFE AND WORKED FROM THERE. HE ALSO WORKED FOR THE MINN. & PACIFIC RR., THE ST. PAUL AND D. RR. AT SOME TIME HE WAS A FIELD ASSISTANT TO THE U.S. GEOLOGICAL SURVEY AND A FOREST EXPERT TO THE BUREAU DF FORESTRY, USDA; HE WAS BUPT. OF KIMBERLY EXPLOR. CO. AS FORESTRY ASSISTANT TO SOUTHERN APPALACHIAN FORESTRY, HE PUBLISHED "THE SOUTHERN APPALACHIAN FORESTRY, HE PUBLISHED "THE SOUTHERN APPALACHIAN FORESTS, NORTHERN ROCKY MTS. FORESTS, AND THE JACK PINE IN THE GREAT AMERICAN DESERT. SEE REFERENCES FOR ADDITIONAL PUBLICATIONS OF H.B. AYRES. ALL OF THESE HAVE BEEN SEEN BY THE AUTHOR IN THE EISENHOWER LIBRARY, GEOLOGY SECTION, JOHNS HOPKINS UNIVERSITY, BALTIMDRE, MARYLAND.

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FLORENCE E. MAYBRICK IN 1914 RESIDED IN GRAYSON CO., VIRGINIA, AND ALONG WITH CARRIE E. ROGERB, WM. E. MILNE AND S.V. HAYDEN, AS CO-TRUSTEES, OWNED ABOUT 150,000 AGRES OF LAND IN GRAYSON, WYTHE AND SMYTH COUNTIES, VIRGINIA, FROM IRON MOUNTAIN, ALONG BOTH SIDES OF THE NEW RIVER, ENDING TO THE NORTH AT THE FOOT OF THE MOUNTAINS ON CREBSY AND DICKEY CREEKS. THIS SAME TRACT OF LAND GRANTED TO GEORGE LAWRENCE BY LETTERS PATENT OF COMMONWEALTH OF VIRGINIA ON 13 JULY, 1796. OTHER LANDS PURCHASED BY FLORENCE E. MAYBRICK IN 1916 FROM ALBERTINA W. COC, WIDOW OF JOHN W. COE, AND FAMILY; OR SOLD TO JUNE L. HARMAN OF SPEEDWELL'IN 1916 FOR OPERATING AND REMOVING TIMBER. BARKS AND PRODUCTS FOR 10 YEARS.

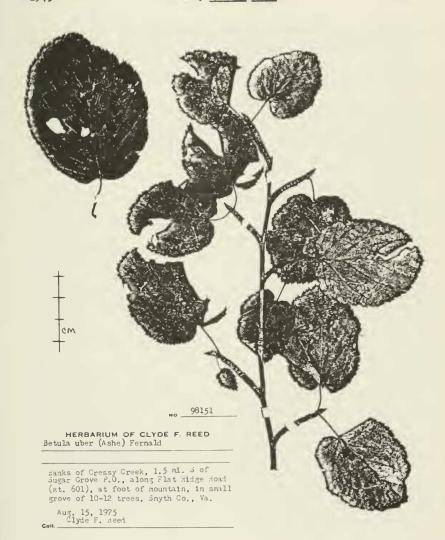
ON AUGUST 15, 1975, AFTER MUCH SEARCHING ALONG CRESSY CREEK, ABOUT 1.5 MILES SOUTH OF SUGAR GROVE P.O., ALONG FLAT RIOGE ROAO (RT. 601), ON THE LANOS OF GARLANO ROSB, RAY HAULSEE AND VIRGIE HAULSEE, I FOUND A SMALL GROVE OF BETULA UBER, ABOUT 10 TO 12 TREES, 17-21 FEET TALL, WITH ALL THE MAJOR BRANCHES HIGH UP IN THE TREES, PRACTICALLY BRANCHESS FOR THE FIRST 12-15 FEET. MOST OF THE TREES ARE VERY NEAR THE BANK OF CRESSY CREEK, WHICH AT THIS POINT IS ABOUT 12 PEET ACROSS, ROCKY AND WITH WATER ABOUT 1 FOOT DEEP IN PLACES. A FEW OF THE LARGER TREES ARE 10-15 FEET FROM THE BANK. ALL THE TREES ARE IN AN AREA ABOUT 60-70 FEET LONG AND 15 FEET WIDE, AND MAINLY ON THE WEST OR SOUTH SIDE OF CRESSY CREEK. THE SOIL IS ACIO, PH ABOUT 6.7, OVERLYING REDOISH CLAY, NOW COVERED WITH THIN HUMUS AND ALLUVIUM. A FEW LARGE TO MEDIUM BOULDERS ARE IN THE GROVE. SPECIMENS COLLECTED AT THIS TIME OO NOT HAVE CONES AND THE YOUNG CATKINS HAVE NOT APPEARED YET. ALL TREES SEEM TO BE STERILE.

From the specimens collected August 15, 1975, the following additional observations as to the description and anatomy of $\underline{\text{Betula}}$ $\underline{\text{uber}}$ can be made.

BETULA UBER (ASHE) FERNALO, RHOOORA, 47: 325, PL. 974, FIGS 1-5. 1945.

SYNO: BETULA LENTA VAR. UBER ASHE, RHOOORA, 20: 64. 1918.

SMALL SLENGER TREES 5-9.9 M. TALL, 7.35 - 21 CM. DBH, WITH BLACKISH-BROWN RATHER THIN (2-4 MM. THICK) TRUNK BARK, RELATIVELY SMOOTH; INNER BARK LIGHTER, AROMATIC WITH FLAVOR AND OOOR OF BIRCH OR WINTERGREEN OIL; TWIG BARK BLACKISH, SMOOTH, WITH OCCASIONAL LARGE ROUNDISH LENTICELS; INTERNOOES ON MAIN TWIGS ABOUT 2 CM. APART, THOSE ON ULTIMATE SHORT-SHOOTS VERY CLOSE, PRACTICALLY CONTIGUOUS, WITH FEW (2-7) LEAVES PRODUCED PER YEAR; BUOS 4-6 MM. LONG, SCALES OVATE IN LOWER HALF, BECOMING GRAOUALLY TO ABRUPTLY POINTEO, CHESTNUT-BROWN WITH A WHITISH TO LIGHT TAN FRINGE OF SCALY HAIRS ALONG UPPER MARGIN; LEAVEB DARK GREEN ON UPPER SURFACE, LIGHTER GREEN BENEATH, SUBORBI-CULAR, OVATE OR SHORT ELLIPTIC, SUBCORDATE OR SOMETIMES OBLIQUE AT BASE, ROUNDED OR VERY OBTUSE AT APEX; BLADES GLABROUB, 2-5 CM. LONG, 2-4 CM. BROAD, UPPER SURFACE SMOOTH WITH SCATTEREO WHITE HAIRS 1-2 MM. LONG ALONG THE VEINS, THE HAIRS MORE NUMEROUS ON UNDERSURFACE ALONG THE VEINS; PETIOLES 0.5-1.5 CM. LONG, WITH TAWNY TO WHITISH HAIRS 1-2 MM. LONG, WITH A BLIGHTLY HAIRY OEEP SINUS WHERE PETIOLE ENTERS LEAF-BLAGE; MARGINB IRREGULARLY SERRATE WITH 3-6 PAIRS OF PRIMARY VEINS, THE APICES OF TEETH POINTING FORWARD OR SLIGHTLY RE-CURVEO TOWARD MAIN AXIS OF LEAF, THE MAIN TIPS ENDING THE PRIMARY VEINS WITH 1-2 SMALLER TEETH BELOW THEM; TEETH RATHER OELTOID WITH THE APEX BOMETIMES ABRUPTLY POINTEO; PISTILLATE AMENTS COMPACT, ELLIPSOIO-SUBCYLINORIC, SESSILE, ERECT, 1-1.5 CM. LONG; FERTILE BRACTS CORIACEOUS, STRONGLY RIBBEO, GLABROUS, THE BROAD AND LOW MIDDLE LOBE AND THE BROAD LATERAL LOBES SUBEQUAL; SAMARAS BROAOLY CUNEATE, 1.5 -2.1 MM. LONG, ABOUT 1 MM. BROAO, OARK BROWN, THE WING BROADENED UPWARD AND NARROWER THAN TO NEARLY AS BROAD AS THE NUTLET.



LOCALITY: BANKS OF CRESSY CREEK, 1.5 MILES SOUTH OF SUGAR GROVE P.O., ALONG FLAT RIOGE ROAD (RT. 601), AT FOOT OF MOUNTAIN, IN SMALL GROVE OF 10-12 TREES. AUGUST 15, 1975. CLYOE F. REED 98151. THIS MOST PROBABLY THE TYPE LOCALITY, NOT THE REFERENCE TO DICKEY CREEK, AS CITED BY MAZZEO (1974).

SECTIONS OF THE WOOD SHOW DIFFUSE POROUS ARRANGEMENT OF THE VESSELS, THE VESSELS BEING SDLITARY OR IN PAIRS. MORE OBTAILED COMMENTS ON THE WOOD ANATOMY WILL BE DISCUSSED LATER.

OTHER PLANTS COLLECTED ON AUGUST 15, 1975 IN THE CLOSE VICINITY OF

BETULA UBER ALONG CRESSY CREEK INCLUGE: MAGNOLIA FRASERI, PYRULARIA PUBERA,

CAMPANULA DIVARICATA, BETULA LENTA, BETULA ALLEGHENIENSIS, AMELANCHIER ARBOREA,

TSUGA CANADENSIS, RHODOCOENDOROM MAXIMUM, TILIA AMERICANA, PINUS RIGIDA, MENI
SPERMUM CANADENSE, CLETHRA ACUMINATA, MAGNOLIA ACUMINATA, ISOTREMA MAGROPHYLLA

AND OXYDENOROM ARBOREUM. IN NEARBY PASTURES WERE EUPHORBIA LATHYRUS, ERODIUM

CICUTARIUM AND CUPHEA PETIOLARIS.

BETULA UBER (ASHE) FERNALO IS MOST PROBABLY A HYBRIO BETWEEN BETULA AL-LEGHENIENSIS X PUMILA VAR. GLANOULIFERA, ALSO KNOWN AS BETULA X PURPUSII
SCHNEID (ILLUS. HANOB. LAUBHOLZK., 1: 102. 1904), THE PURPUS BIRCH OR MINNE-SOTA BIRCH. BETULA X PURPUSII SCHNEIO. (AS B. LUTEA X PUMILA) WAS NAMED FOR J.A. PURPUS OF THE DARMSTAOT BOTANICAL GARDEN, GERMANY, WHO CULTIVATED THIS HYBRIO FROM MATERIAL FOUND BY HIS BROTHER IN MICHIGAN (LITTLE, 1953, P. 70). B. X PURPUSII IS A HYBRIO BETWEEN A TREE SPECIES (B. ALLEGHENIENSIS) AND A SHRUB SPECIES (B. PUMILA), AND PROBABLY ACCOUNTS FOR THE SHRUB-LIKE APPEARANCE OF THE LEAVES AND TOP OF TREE ON A TREE-LIKE TRUNK. B. UBER HAS INHERITED THE WINTERGREEN OOOR OF B. ALLEGHENIENSIS AND THE LEAF CHARACTERS OF B. PUMILA. THE HYBRIO NATURE OF B. UBER IS FURTHER JUSTIFIED BY ITS STERILITY. ALTHOUGH THE SPECIMENS COLLECTED BY ASHE IN 1914 SHOW MATURE CONES, ALL THE SPECIMENS COLLECTED BY THE AUTHOR ON AUGUST 15, 1975 ARE NOT ONLY DEVOID OF SIGNS OF CATKINS OR CONES, BUT NO SCARS ARE TO BE FOUND ON TWIGS SEVERAL YEARS OLD. ONE WOULD NOT EXPECT ALL HYBRIOS TO BE FERTILE OR STERILE. THERE MAY BE MORE PLANTS IN THE VICINITY, MAYBE ON DICKEY CREEK. B. X PURPUSII IS FOUND IN ONTARIO, MICHIGAN, WISCONSIN, MINNESOTA, ILLINOIS AND INDIAN, MAINLY IN WET AREAS, AS TAMARACK SWAMPS. THE DESCRIPTION OF B. X PURPUSII SCHNEID. IN TREES AND SHRUBS OF MINNESOTA, P. 101-102, WITH ILLUSTRATION, FITS THE OESCRIPTION OF BETULA UBER EXTREMELY CLOSELY, IF FACT, I WOULD GO SO FAR TO SAY BETULA UBER (ASHE) FERNALO IS B. X PURPUSII SCHNEIO. IN THE ILLUSTRATION OF PLANTS COL-LECTED ON CRESSY CREEK AUGUST 15, 1975 BY THE AUTHOR, THERE IS INDICATION OF ONE LEAF AS TO ITS BEING POINTED. ALL THE OTHER LEAVES ARE NDT TRULY ROUNDED AT THE APEX, BUT THE TWO SIDES SEEM TO MEET UNEVENLY AS IF A COMMON POINT COULO NOT BE REACHEO; NO TWD TIPS ARE THE SAME.

ANDTHER HYBRIO, <u>BETULA</u> X <u>SANDBERGI</u> BRITTON (BULL. TORR. BDT. CLUB, 31: 166. 1904), KNOWN TO BE FERTILE TO A LIMITED DEGREE IS ALSD FDUNO IN THE TAMARACK SWAMPS OF MINNESOTA, SASKATCHEWAN AND MONTANA. IT IS A HYBRIO BETWEEN THE TREE SPECIES, <u>BETULA PAPYIFERA</u>, AND THE SHRUB SPECIES, <u>BETULA PUMILA VAR. GLANOULIFERA</u>, AND PROGENY SEGREGATE INTO FDRMS MORE OR LESS RESEMBLING DNE OR THE OTHER PARENT. ALSD NOTE OESCRIPTION AND ILLUSTRATIONS IN ROSENDAHL AND BUTTERS, p. 100-101.

ANOTHER HYBRIO, BETULA X JACKII SCHNEID, BETWEEN B. LENTA AND BETULA PUMILA, ALTHOUGH BAID TO BE A HYBRID KNOWN ONLY IN CULTIVATION, COULD WELL BE A P 881BLE EXPLANATION FOR BETULA UBER, BINGE B. UBER HAB MANY CHARACTERISTICS OF B. LENTA, ESPECIALLY THE BLACK NON-PEELING BARK, BLACKISH TWIGS AND INFREQUENT ACUMINATE LEAVES.

In conclubion, it seems to me that $\underline{\text{Betula uber}}$ is a hybrid between $\underline{\text{B}}$. Lenta or $\underline{\text{B}}$, allegheniensis and $\underline{\text{B}}$. Pumila var. Glandulifera, or possibly some other variety or form of $\underline{\text{B}}$. Pumila, all the above hybrids being between a tree species and a shrub species, with $\underline{\text{B}}$. Uber showing many features of both types of growth. For the hybrids, soth $\underline{\text{B}}$. X purpubil & $\underline{\text{B}}$. X Jackii predate $\underline{\text{B}}$. Uber. With controlled hybriditation, the exact cross should be able to be obtained. Also conparison of $\underline{\text{B}}$. Uber with Living and Herbarium specimens of these hybrids may prove $\underline{\text{B}}$. Uber to the ancestors.

BECAUSE H.B. AYREB LIVEO IN MINNESOTA AND DID EXTENSIVE WORK ON THE FLATHEAD FOREST RESEAVE IN MONTANA, I THINK AYRES MAY HAVE PLANTED THE TREES ON CRESBY CREEK AND PERHAPS ELSEWHERE, WHEN MARKING FOREST TRACTS, AB THE MAYBRICK TRACT, THIS LOCATION BEING THE NORTHERN LIMIT OF THAT LAND TRACT ON CRESSY CREEK. PERHAPS, HE DID PUT A TREE ON DICKEY CREEK WHICH WAS MORE FERTILE, BUT THOSE NOW ON CRESSY CREEK SEEM TO BE STERILE, AND TO HAVE BEEN FOR SOME TIME. THE FACT THAT THERE IS ONLY ONE SPECIMEN COLLECTED AND DEPOSITED BY AYRES AT GRAY HERBARIUM WITHOUT A DATE MAKES ME BELIEVE THAT AYRES PLANTED THE TREES. ALSO SINCE AYRES ALONG WITH ASHE WROTE A BOOK, THE SOUTHERN APPALACHIAN FORESTS IN 1905, I BELIEVE THE TREES WERE PLANTED THERE AT THIS OR OTHER EARLIER TIMES AND THEN REVISITED BY ASHE IN 1914. THE FACT THE ASHE MAKES NO MENTION OF THE PLANT FOR FOUR YEARS AFTER HE COLLECTED IT, AND THEN PLACES IT ON DICKEY CREEK, NOT CRESSY CREEK, WHERE AYRES HAD SAID HIS WAS FOUND, MAKES ME BELIEVE ASHE DIO NOT KNOW WHERE THE TREES REALLY WERE. HOWEVER, THERE IS THE CHANGE THAT THERE WAS, AND MAY STILL BE, A TREE ON DICKEY CREEK.

I wish to thank the following people who have been very helpful in my finding the locality for $\underline{\text{Betula UBEr}}$, as indicated by Ashe and Ayres.

Mr. J. RICHARO CAMPSELL (MARION, Va.), WHOSE FATHER, AND LATER HE, OWNED THE LUMBERING RIGHTS TO PORTIONS OF IRON MT., PINE MT. AND OTHER TRACTS IN SMYTH AND GRAYSON COUNTIES. IN ADDITION TO LUMBER TAKEN TO THE RYE VALLEY STATION AREA TO THE TEAS EXTRACT CO. WHERE TANNIC ACID WAS EXTRACTED FROM HEMLOCK BARK AND CHEBTNUT WOOD, SPRUCE, CHEBTNUT-OAK AND OTHER TIMBERS WERE AL80 MADE INTO LUMBER. MR. CAMPBELL PROVICED ME WITH MUCH VALUABLE DATA CON-CERNING THE MARION & RYE VALLEY RR STARTED ABOUT 1888 FOR THE PURPOSE OF GET-TING OUT IRON ORE AND MANGANESE. SOME MANGANESE ORE, BUT NO IRON ORE, WAS FOUND, AND THE RAILROAD GAVE UP. LATER, WITH MORE FUNDS, A CORPORATION CALLED THE MARION & RYE VALLEY AND VIRGINIA SOUTHERN RR WAS FOUNDED, AND THE RAILROAD BUILT ALONG DICKEY CREEK TO TROUT DALE AND SEYONO, IN ALL ABOUT 30 MILES OF TRACK, FOR THE PURPOSE OF BRINGING THE TIMBERS DOWN FROM IRON AND PINE MTS. TO SUGAR GROVE OR RYE VALLEY STATION. MR. WILLIAM HOWARD TEAS, A YOUNG CHEMIST FROM PENNSYLVANIA WAS SENT BY THE AMERICAN LEATHER CO. TO RUN THE EXTRACT CO., WHICH LATER WAS CALLED THE TEAS EXTRACT CO., AND THE AREA OR TOWN THEREABOUT CALLED TEAS, VIRGINIA (NOW AN AREA TO THE NORTHWEST OF SUGAR GROVE ALONG RT. 601). ACCORDING TO PAUL SEXTON (RURAL RETREAT IN WYTHE CO.), WHOSE FATHER WAB

THE LAST SUPERVISOR AT THE TEAS EXTRACT CO., THE EXTRACTION OF TANNIC ACID CEASED ABOUT 1922 AFTER THE CHESTNUT BLIGHT DESTROYED MOST OF THE TREES. BE-CAUSE OF THE DECLINE IN PRODUCTION THEREAFTER, THE COMPANY MOVED TO NASHVILLE, TENNESSEE, WHERE HE AND HIS FATHER WORKED FOR MANY YEARS. LATER, PAUL RETURNED AND IS NOW RETIRED IN RURAL RETREAT, VIRGINIA. BIRCH BARK WAS ALSO EXTRACTED FOR OIL OF WINTERGREEN (BETULA ALLEGHENIENSIS). AFTER THE EXTRACT COMPANY MOVED AWAY AND THE LUMBERING COMPANY MOVED TO WEST VIRGINIA, THE MARION AND RYE VALLEY RR. CONTINUED TO OPERATE AS A PASSANGER AND FREIGHT RAILROAD UNTIL ABOUT 1932. IN 1933-1935, A LARGE CCC CAMP WAS LOCATED IN SUGAR GROVE AND HELPED TO REMOVE THE RR TIES AND BED, AND RT. 16 WAS BUILT ON TOP OF MOST OF THE RAILROAD BED FROM SUGAR GROVE TO TROUT DALE ALONG DICKEY CREEK. THE RYE VALLEY STATION FRONT WAS REMOVED, AND NOW IS THE FRONT OF A VACANT STORE IN SUGAR GROVE. DURING THE PRIME YEARS OF EXTRACTION OF TANNIC ACID ABOUT 250 MILLION BOARD FEET OF BOTH HARD AND SDFT WDODS (MAINLY SPRUCE) WERE CUT DFF IRON MT. BALSAM FIR WAS PLENTIFUL THEN, AND WAS TAPPED (BY PUNCHING THE BLISTERS UNDER THE BARK) FOR BALSAM SAP.

CLARA HILL CARNER, HISTORIAN FOR SMYTH COUNTY, VIRGINIA, AND FOUNDER OF THE HISTORICAL SOCIETY OF SMYTH COUNTY, HAS PROVIDED ME WITH MUCH HISTORY ABOUT RYE VALLEY, WHERE EARLY SETTLERS FOUND A TYPE OF WILD RYE GROWING. SHE ALSO INTRODUCED ME TO THE SMYTH COUNTY CENTENNIAL VOLUME PRODUCED IN 1932 BY MR. WILSON. (SMYTH COUNTY WAS ESTABLISHED IN 1832; PREVIOUSLY IT HAD BEEN PART OF FINCASTLE CO. IN REVOLUTIONARY DAYS, AND LATER PART OF WASHINGTON AND WYTHE COUNTIES).

Sena Ward, who resides in the Sugar Grove-Teas area along Rt. 601, northwest of Sugar Grove, is writing a history of Rye Valley and Loaned me photos of the Marion & Rye Valley RR., the Lead Mine (1902) and the Teas Extract Co. (1914). The Lead Mine area is still dwned by relatives of Sena Ward. Also the wild rye is still growing on property owned by Sena Ward. The Lead obtained here was used by Indians for arrowheads, and later for bullets by the settlers. It is interesting to note than Bricks taken from the Lead Mine recently bear the imprint of a tiger. Dr. Schiff, son-in-Law of Sena Ward, on the Staff of George Washington University, has found the name of the company on one of the Bricks.

RAY HAULSEE AND VIRGIE HAULSEE, ON WHOSE LAND THE BETULA UBER LOCATION IS SITUATED, ALONG CRESSY CREEK, 1.2-2 MI. SOUTH OF SUGAR GROVE ON FLAT RIDGE Road (Rt. 601). Ray Haulsee Land is on Both sides of the Road, south of the United States Forest Work Camp, and Virgie Haulsee Land is to the west and SOUTH OF CRESSY CREEK. THE LOWER PORTION OF THE VIRGIE HAULSEE LAND WAS PUR-CHASED NOV. 21, 1947 FROM J.T. HUTTON (WIDOWER) CONSISTING OF THREE TRACTS FROM THE JAMES LAND, PART OF THE BLANKENBECKLER LAND AND THE WARFIELD CHURCH LOT, WHICH IS "ON THE WATERS OF SLEMPS CREEK, BEGINNING ON SOUTH SIDE OF SLEMPS CREEK ROAD IN EDGE OF SUGAR GROVE". (CRESSY CREEK RUNS INTO SLEMPS CREEK BEFORE GOING ON TO THE HOLSTON RIVER). (DEED BOOK 99, p. 241). ON OCTOBER 17, 1949, THE LAND WAS DEEDED TO J.W. HAULSEE AND FAY W. HUTTON "FOR FAY W. HUTTON TO CARE FOR AND PROVIDE J.W. HAULSEE AND MAGGIE HAULSEE WITH NECESSITIES OF LIFE -- ETC.", THE LAND TO BE KNOWN AS THE JOHN HAULSEE FARM. (DEED BODK 107, P. 59). THE UPPER AREA WHERE BETULA UBER IS FOUND NOW BELONGS TO GARLAND ROSS WHO PURCHASED IT FROM CLARA BROOKS STONE ET VIR; 'THIS LAND BEING THE SAME LAND CONVEYED TO J.W. HAULSEE FOR LIFE WITH REMAINDER TO CLARA BROOKS BY FAY W. HUTTON ET VIR (JOHN), MAY 25, 1954". REST OF LAND TO J.W. HAULSEE BY A.M. HAULSEE ET AL, APRIL 21, 1921. (DEED BOOK 174, P. 523). OTHER REFERENCES TO THIS LAND, SEE DEED BOOK 129, P. 110.

REFERENCES

- ASHE, W.W. NOTES ON BETULA. RHOOORA, 20: 63-64. 1918.
- AYRES, H.B. WASHINGTON FOREST SERVICE. 19TH ANN. REPORT, U.S. GEOL. SURV., 1897-1898. PART V: 283-313, 27 PL. WASHINGTON. 1899.
- --- The Flathead Forest Reserve. 20th Ann. Report, U.S. Geol. Surv, 1898-1899. Part V: 245-316, 38 pl. Washington. 1900. (Flathead Forest Reserve, Montana).
- --- THE LEWIS AND CLARK FOREST RESERVE, MONTANA. 21ST ANN. REPORT, U.S. GEOL. SURV., 1899-1900. PART V: 27-80, pl. II-XXXII, 4 MAPS. WASHINGTON. 1900.
- --- Timber conditions in the pine region of Minnesota. 21 st Ann. Report, U.S. Geol. Surv., 1899-1900. Part V: 673-711, Map. Washington. 1900.
- AYRES, H.B. AND W.W. ASHE THE SOUTHERN APPALACHIAN FORESTS. 291 PP., 37 PL. WASHINGTON GOVT. PRINTING OFFICE. 1905.
- CIRCUIT COURT RECORDS, SMYTH COUNTY COURT HOUSE, MARION, VIRGINIA. LEEOS BOOKS 39, P. 189. 1914; BOOK 40, PP. 543-544. 1916; BOOK 41, P. 243. 1916.
- FERNALO, M.L. CONTRIBUTIONS FROM THE GRAY HERBARIUM OF HARVARO UNIVERSITY -CLIX. Some North American Corylaceae (Betulaceae). 1. Notes on Betula
 IN EASTERN North America. Rhoodra, 47: 303-329, Illus. 1945.
- --- GRAY'S MANUAL OF BOTANY, 8TH EO., P. 536. AMERICAN BOOK CO., N.Y. 1950.
- JOHNSON, A.G. BETULA LENTA VAR. UBER ASHE. RHOODRA, 56: 129-131. 1954.
- LITTLE, E.L. CHECKLIST OF THE NATIVE AND NATURALIZED TREES OF THE UNITED STATES. USDA, AGRIC. HANDS. 41: 65-66. 1953.
- Mazzeo, P.M. <u>Betula uber</u> -- What is it and where is it? Virginia J. Sci., 22: 105. 1971.
- --- Notes on the Distribution of Betulzceae (Birch Family) in Virginia.

 Jeffersonia: A Newsletter of Virginia Botany, 7: 2-4. 1973.
- ---- BETULA UBER -- WHAT IS IT AND WHERE IS IT? CASTANEA, 39(3): 273-278, FIG. 1, A-B. 1974.
- ROSENOAHL, C.O. AND F.K. BUTTERS TREES AND SHRUBS OF MINNEBOTA, PP. 101-102, ILLUS. UNIV. MINN. PRESS. 1928.